using a model of the measuring signal containing a sinusoidal component in accordance with the relationship $y = A \cdot \sin(2\pi ft + \varphi)$, y designating an instantaneous value of the model of the measuring signal, A designating the amplitude, f designating the frequency, φ designating the phase angle and t the time; and

using both the model of the measuring signal and the sampled values, via a recursive nonlinear least-squares estimation method, to determine the model frequency parameter of the measuring signal by the estimation together with the model amplitude parameter and the model phase angle parameter.

7. A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 6, wherein use is made of a model for the measuring signal in accordance with the relationship $y = A \cdot \sin(2\pi ft + \varphi) + d$, d modeling a DC component of the measuring signal.

8. A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 6, wherein use is made of a model for the measuring signal in accordance with the relationship $y = A \cdot \sin\left(2\pi \sum_{i=0}^{n} (f^{(i)} t^i) t + \varphi\right)$, $f^{(i)}$ designating the ith order time derivative of the frequency and modeling a change in the frequency over time, and various orders of the time derivative of the frequency being taken into account by selecting the variable n.

9. A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 7, wherein use is made of a model of the measuring signal in accordance with the relationship $y = A \cdot \sin\left(2\pi \sum_{i=0}^{n} (f^{(i)} t^i) t + \varphi\right) + d$, $f^{(i)}$ designating the ith time derivative of the frequency and modeling a change in the frequency over time, and various orders of the time derivative of the frequency being taken into account by selecting the variable n.

10. A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 6, wherein the values of the amplitude, the phase angle and the frequency determined by the estimation method are output as resulting values only when an estimation error is less than a smallest permitted estimation error.